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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of)
)
Prescribing the Authorized)
Unitary Rate of Return for)
Interstate Services of Local) CC Docket No. 98-166
Exchange Carriers)
)

REBUTTAL COMMENTS OF GTE

Dated: April 8, 1999

Respectfully submitted,

GTE Service Corporation and its affiliated
domestic telephone operating companies

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REBUTTAL COMMENTS OF GTE

GTE Service Corporation and its affiliated domestic telephone operating companies (collectively "GTE")¹ respectfully submit these comments in response to the Notice of Proposed Rulemaking in the above-captioned proceeding.² By the *Notice*, the Commission initiated a proceeding to consider represcription of the authorized rate of return for interstate access services provided by incumbent local exchange carriers ("ILECs") subject to rate of return regulation.

¹ GTE's domestic telephone operating companies are: GTE Alaska Incorporated, GTE Arkansas Incorporated, GTE California Incorporated, GTE Florida Incorporated, GTE Hawaiian Telephone Company Incorporated, The Micronesian Telecommunications Corporation, GTE Midwest Incorporated, GTE North Incorporated, GTE Northwest Incorporated, GTE South Incorporated, GTE Southwest Incorporated, Contel of Minnesota, Inc., and Contel of the South, Inc.

² Prescribing the Authorized Unitary Rate of Return for Interstate Services of Local Exchange Carriers, CC Docket No. 98-166, *Notice Initiating A Prescription Proceeding and Notice of Proposed Rulemaking*, FCC 98-222 (released October 16, 1998) (hereafter "*Notice*").

Reply comments were filed on March 16 by AT&T, MCI and GSA advocating that the unitary rate of return should be reduced. However, as the attached affidavit of Dr. James H. Vander Weide demonstrates, the approach used by these participants is seriously flawed. Specifically, Dr. Vander Weide addresses the AT&T submission that purports to support a lower unitary rate.

I. SUMMARY.

On March 16, 1999, AT&T filed its Responsive Submission to the testimonies of other parties in this proceeding. As part of its Responsive Submission, AT&T filed an affidavit prepared by Bradford Cornell and John I. Hirshleifer ("Cornell/Hirshleifer") which contains an estimate of the ILECs' weighted average cost of capital in the range 8.5 percent to 9.5 percent. Using this recommended range as a starting point, AT&T recommends an allowed rate of return for the ILECs in the range 8 percent to 9 percent. This is based on its recommendation that the Commission include a downward adjustment of 50 basis points to reflect the purportedly low business risk of providing interstate access services and the decline in interest rates since the time of their cost of capital estimate, which uses year-end 1997 data.

In his attached affidavit, Dr. Vander Weide has reviewed the Responsive Submission of AT&T, including the Cornell/Hirshleifer Affidavit, and responds to their cost of capital studies and recommended overall allowed rate of return for the ILECs. He first responds to the cost of capital studies contained in the Cornell/Hirshleifer Affidavit. He then responds to the AT&T recommendations to: (1) impose an additional 50-basis point downward adjustment to the Cornell/Hirshleifer estimate of the ILECs'

weighted average cost of capital; and (2), to require the price cap LECs to adjust the price cap indices for AT&T's estimate of a change in the cost of capital.

From his review of the Cornell/Hirshleifer Affidavit, Dr. Vander Weide concludes that Cornell/Hirshleifer have significantly underestimated the ILECs' weighted average cost of capital. This underestimation is a result of: (1) their use of historically oriented book value, rather than actual market value estimates of the ILECs' capital structure; (2) their failure to recognize that the RHCs do not satisfy the basic stability assumptions of traditional cost of equity estimation techniques; (3) their use of a three-stage DCF Model which incorporates unreasonable growth expectations and produces incongruous results; (4) their failure to include quarterly compounding and flotation costs; (5) their use of historically-oriented betas that do not reflect the future risks of providing telecommunications services in a competitive environment; (6) their use of risk premiums that are significantly less than the risk premiums which Dr. Cornell has previously recommended in his published work; and (7) their assumption that interexchange access services are provided in a "quasi-monopoly" environment and are the least risky telecommunications service. On the basis of his review of the Cornell/Hirshleifer Affidavit, Dr. Vander Weide finds no reason to alter his estimate that the ILECs' weighted average cost of capital is in the range 12.75 percent to 13.15 percent.

II. DISCUSSION.

A. Cornell/Hirshleifer Incorrectly Use Book Values in Their Capital Structure Approach.

Cornell/Hirshleifer calculate the ILECs' weighted average cost of capital using both book and market value capital structure weights. The use of book value capital structure weights is inconsistent with both financial practice and with the economic and financial theory of corporate valuation. Financial practitioners use market value weights to measure the weighted average cost of capital because market values are the best measure of the amount of debt and equity capital invested in the company on a forward-looking basis. Economic and financial theories also incontrovertibly require the sole use of market value capital structure weights to calculate a company's weighted average cost of capital. Indeed, Dr. Cornell recommends the use of market value weights to calculate the weighted average cost of capital in his book, *Corporate Valuation*, cited in Paragraph 1 of his affidavit. Since book value equity weights are significantly lower than market value equity weights, the use of book value equity weights by itself causes Cornell/Hirshleifer to underestimate the ILECs' weighted average cost of capital by at least 52 basis points.

B. Cornell/Hirshleifer Make Incorrect Assumptions in Their Three Stage DCF Model.

Cornell/Hirshleifer employ a three-stage DCF model in which their proxy companies' earnings are expected to grow in line with analysts' earnings growth expectations for only the next four years. After this initial period, Cornell/Hirshleifer arbitrarily assume that their proxy companies' earnings will decline over a 15-year

period to their current expected growth in the GNP, 5.5 percent, and then grow at 5.5 percent forever. Cornell/Hirshleifer's basic growth assumptions are not only arbitrary, but also inconsistent with the evidence that a company's earnings can grow at the analyst's expected growth rate for many years. Cornell/Hirshleifer's incorrect and arbitrary assumptions regarding future growth cause them to significantly underestimate the ILECs' cost of equity.

C. Severe Anomalies Occur in the Cornell/Hirshleifer Three-Stage DCF Model.

Cornell/Hirshleifer's three-stage DCF Model produces cost of capital estimates that fail the common sense standard that the cost of capital should increase with the risk of an investment. Cornell/Hirshleifer's estimates fail to conform to this standard in several areas. First, the Cornell/Hirshleifer model assigns telecommunications companies with the highest betas (highest business risk) the lowest DCF results, while companies with low betas (lower business risk) are assigned high DCF results. This turns accepted financial logic on its head. Second, Cornell/Hirshleifer claim that local exchange service, including the provision of interstate access, is less risky than other telecommunications services such as interexchange service. Yet their three-stage DCF Model produces significantly lower DCF results for AT&T, MCI, and Sprint, than it does for their proxy group of RHCs. Indeed, using their methodology, the average DCF result for AT&T, MCI, and Sprint is only 7.75 percent compared to their result of 9.28 percent for the RHCs. Third, although Cornell/Hirshleifer claim that their telecommunications proxy group is significantly less risky than the S&P 500, their DCF result for the S&P 500 is only 8.6 percent, significantly less than their 9.2 percent DCF

result for their telecommunications proxy group. Fourth, although electric and natural gas utilities are generally considered to be less risky than the RHCs, Cornell/Hirshleifer's three-stage DCF Model produces approximately the same DCF result for electric utilities as for the RHCs, and significantly higher DCF results for natural gas companies than for the RHCs. These incongruous results provide convincing evidence that Cornell/Hirshleifer's three-stage DCF methodology simply does not provide reasonable cost of equity estimates.

D. Cornell/Hirshleifer Incorrectly Use the Capital Asset Pricing Model ("CAPM") .

The CAPM approach requires estimates of the required rate of return on a risk-free security, estimates of a company-specific risk factor, or beta, and estimates of the required rate of return on the market portfolio. Cornell/Hirshleifer's CAPM analysis is compromised by their procedure for estimating their proxy companies' average beta and the expected rate of return on the market portfolio. To estimate their proxy companies' betas, for example, Cornell/Hirshleifer use five years of historical data on the market rates of return for their proxy companies and the market portfolio. These historical data surely do not reflect the momentous changes in telecommunications industry risk caused by the passage of the Telecommunications Act of 1996. The momentous changes in telecommunications industry risk are also not included in the Barra betas Cornell/Hirshleifer use to corroborate their five-year historical betas. Since future betas for the RHCs are likely to exceed historical betas, Cornell/Hirshleifer's use of historical betas have caused them to further underestimate the ILECs' cost of equity.

In addition, Cornell/Hirshleifer make no allowance for the tendency of the traditional CAPM to underestimate the cost of equity for companies whose estimated beta is less than 1.0.

E. Cornell/Hirshleifer Use an Incorrect Risk Premium.

Cornell/Hirshleifer estimate the expected return on the market portfolio from historical risk premium data on returns to stock and bond investors. Prior to Cornell/Hirshleifer's testimony for AT&T, Professor Cornell recommended in his published work the use of the commonly accepted arithmetic mean risk premium advocated by Ibbotson Associates, which was 7.8 percent at the time of the Cornell/Hirshleifer studies. In their testimony for AT&T, Cornell/Hirshleifer recommend a risk premium that is 230 basis points less than the Ibbotson risk premium Dr. Cornell previously recommended. Dr. Vander Weide shows that Cornell/Hirshleifer's use of a significantly lower risk premium than Dr. Cornell has previously recommended, along with a historical beta that significantly underestimates the RHCs' future risk, cause them to underestimate the ILECs' CAPM cost of equity by approximately 380 basis points.

F. The Cornell/Hirshleifer Approach Does Not Pass an Overall Test of Reasonableness.

Dr. Vander Weide shows that Cornell/Hirshleifer provide a misleading and highly selective review of financial data in an attempt to support the reasonableness of their recommended weighted average cost of capital for the ILECs. The data presented are misleading because Cornell/Hirshleifer fail to acknowledge that: (1) the cited data are calculated on an after-tax basis, and hence are not directly comparable to their before-tax estimate of the ILECs' weighted average cost of capital; (2) the cited data from

Merrill Lynch and Salomon Smith Barney are not estimates of the ILECs' weighted average cost of capital; and (3) Merrill Lynch and Salomon Smith Barney have specifically warned against the use of their data outside the context for which it was intended. Cornell/Hirshleifer also fail to refer to sources such as the well-known Ibbotson Associates' cost of capital estimates for telecommunications firms, which, not surprisingly, are significantly higher than the Cornell/Hirshleifer estimate of the ILECs' weighted average cost of capital. The Ibbotson estimates, on a before-tax basis, are some 200 to more than 500 basis points higher than the Cornell/Hirshleifer estimate.

G. AT&T Inappropriately Raises the Issue of Price Cap Changes.

The Commission's Notice of Proposed Rulemaking in this docket limited consideration to possible changes in the cost of capital for those LECs still subject to rate of return regulation. AT&T now inappropriately seeks to expand the scope of this proceeding through its recommendation that the Commission "order the price cap LECs to make a downward exogenous adjustment to the price cap indices to reflect the substantial decrease in their capital costs."³

³ AT&T Responsive Submission, at 34.

AT&T's recommendation to adjust price caps based on a link to the LECs' cost of capital has been previously considered and properly rejected by the Commission. The Commission has previously recognized that reinitializing the price cap indices on the basis of rate of return considerations is not consistent with the basic price cap philosophy of providing incentives for the LECs to be more efficient.⁴

Finally, it would be inappropriate to consider any changes in the cost of a single input of the price cap formulas without considering changes in the cost of all inputs. Clearly, AT&T's recommendation goes well beyond the scope of this proceeding.

H. AT&T Incorrectly Introduces a Further Downward Adjustment of Fifty Basis Points.

AT&T's recommended allowed rate of return of 8 to 9 percent for the rate of return LECs includes a 50 basis point downward adjustment. AT&T asserts that this adjustment reflects: (1) the alleged lower risk of the LECs' access business; (2) the use of an embedded cost of debt that is higher than the market cost of debt; (3) the reduction in interest rates they allege has occurred since December 1997, the time of their study; and (4) the purported overstatement of RBOC book equity due to the alleged \$5 billion overstatement in LEC assets reported in a recent Commission audit.

Simply stated, even if accurate (which they are not), none of these reasons support AT&T's recommended downward adjustment. Indeed, quite apart from this recommendation, Cornell/Hirshleifer have already made a downward adjustment of

⁴ See Vander Weide's affidavit, ¶ 63.

significantly more than 50 basis points (through their use of a book value capital structure) to reflect their view that the interstate access business is less risky than the RHCs' other businesses. A further downward adjustment would double count the alleged risk differences between the RHCs' businesses.

Dr. Vander Weide also shows that AT&T fails to support its other proffered reasons to justify a further downward adjustment. Specifically, (1) AT&T fails to recognize that the difference between the embedded cost of debt and the market cost of debt is immaterial when a market value capital structure is correctly used to calculate the weighted average cost of capital; (2) that the LECs' market cost of debt has not changed significantly in the past year;⁵ and (3) that the alleged \$5 billion in "phantom" assets (even if the allegation were true) has no effect on the RHCs' market values or their weighted average cost of capital. The LECs' weighted average cost of capital is determined in the marketplace, not on the LECs' books. For these reasons, AT&T's request for a further downward adjustment must be disapproved.

III. CONCLUSION.

On the basis of his thorough review of AT&T's responsive submission and the Cornell/Hirshleifer Affidavit, Dr. Vander Weide concludes that their analysis is unsupported and insupportable. He reiterates that there is no reason to change his

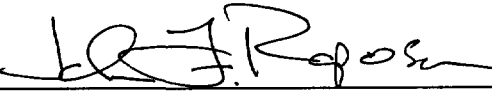
⁵ The yield on Moody's A-rated utility bonds in January 1998 when AT&T performed their cost of capital studies was 7.04 percent; the average yield during the year was 7.04 percent, the average yield during February 1999 is 7.09 percent, and during March 1999, 7.26 percent. The yield on Moody's A-rated industrial bonds in January 1998 was 6.81 percent. The average yield in March 1999 is 7.02 percent. My studies used the 6.68 percent yield on Moody's A-rated industrials at December 1998 (a 12-month low).

previously filed testimony that the correct estimate of the ILECs' weighted average cost of capital is still in the range of 12.75 to 13.15 percent.

Dated: April 8, 1999

Respectfully submitted,

GTE Service Corporation and its affiliated
domestic telephone operating companies

By 

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Their Attorneys

STATE OF NORTH CAROLINA)
COUNTY OF Durham)

James H. Vander Weide, being first duly sworn, deposes and says that he has read the foregoing affidavit of James H. Vander Weide, and that the matters and things set forth therein are true and correct to the best of his knowledge, information, and belief.

James H. Vander Weide
James H. Vander Weide

Subscribed and sworn to before me this 6 day of April, 1999.

Carol H Lowans
Notary Public In and For the State of North Carolina

My commission expires on 12-2-2001.

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REBUTTAL AFFIDAVIT OF JAMES H. VANDER WEIDE

I. Introduction

1. My name is James H. Vander Weide. I am Research Professor of Finance and Economics at the Fuqua School of Business, Duke University. I am also President of Financial Strategy Associates, a firm that provides financial and economic consulting services primarily to companies in the electric, gas, insurance, telecommunications, and water industries. My business address is 3606 Stoneybrook Drive, Durham, North Carolina.

2. I previously submitted affidavits in this proceeding on behalf of Bell Atlantic, GTE, and US West on January 19, 1999, and March 16, 1999. In my earlier affidavits I emphasized the need for the Commission to: (1) use current market values rather than historical costs to estimate the cost of debt and capital structure components of the weighted average cost of capital for those local exchange carriers ("ILECs"¹) still subject to rate of return regulation; (2) send correct economic signals to potential entrants who must choose between leasing access from incumbents and building their own facilities; (3) recognize the significantly increased risks facing ILECs in providing access services; and (4) recognize that a correct estimate of the cost of

¹ Like the FCC, I use the acronym "ILECs" in this proceeding to refer to those local exchange carriers still subject to rate of return regulation. In more general usage, the acronym "ILECs" refers to all incumbent local exchange carriers, not just to those still subject to rate of return regulation.

capital, using market values, a market interest rate, and a market cost of equity, would likely exceed the Commission's currently authorized 11.25 percent rate of return. Indeed, in my reply affidavit submitted in March, I provided strong evidence that the ILECs' weighted average cost of capital is in the range 12.75 percent to 13.15 percent, based on a 6.68 percent market cost of debt, a 14.77 percent cost of equity, and a target market value capital structure containing between 75 percent and 80 percent equity.

3. On March 16, 1999, AT&T filed its Responsive Submission to the testimonies of other parties in this proceeding. As part of their Responsive Submission, AT&T filed an affidavit prepared by Bradford Cornell and John I. Hirshleifer ("Cornell/Hirshleifer") which contains an estimate of the ILECs' weighted average cost of capital in the range 8.5 percent to 9.5 percent. Using this recommended range as a starting point, AT&T recommends an allowed rate of return for the ILECs in the range 8 percent to 9 percent, based on its recommendation that the Commission include a 50 basis point downward adjustment to reflect the purportedly low business risk of providing interstate access services and the decline in interest rates since the time of their cost of capital estimate, which uses year-end 1997 data.

4. I have now been asked by Bell Atlantic, GTE, and U S West to review the Responsive Submission of AT&T, including the Cornell/Hirshleifer Affidavit, and to respond to their cost of capital studies and recommended overall allowed rate of return for the ILECs. I will first respond to the cost of capital studies contained in the Cornell/Hirshleifer Affidavit. I will then respond to AT&T's recommendations to require the price cap LECs to adjust the price cap indices downward to reflect the alleged decrease in capital costs since price caps were initiated.

II. Summary

5. From my review of the Cornell/Hirshleifer Affidavit, I conclude that Cornell/Hirshleifer have significantly underestimated the ILECs' weighted average cost of

capital. Their underestimate is caused by: (1) their use of historically oriented book value, rather than actual market value, estimates of the ILECs' capital structure; (2) their failure to recognize that the RHCs do not satisfy the basic stability assumptions of traditional cost of equity estimation techniques; (3) their use of a three-stage DCF Model which incorporates unreasonable growth expectations and produces incongruous results; (4) their failure to include quarterly compounding and flotation costs; (5) their use of historically-oriented betas that do not reflect the future risks of providing telecommunications services in a competitive environment; (6) their use of risk premiums that are significantly less than the risk premiums which Dr. Cornell has previously recommended in his published work; and (7) their assumption that interexchange access services are provided in a "quasi-monopoly" environment and are the least risky telecommunications service.² On the basis of my review of the Cornell/Hirshleifer Affidavit, I find no reason to change my estimate that the ILECs' weighted average cost of capital is in the range 12.75 percent to 13.15 percent.

6. Capital Structure. Cornell/Hirshleifer calculate the ILECs' weighted average cost of capital using both book and market value capital structure weights. The use of book value capital structure weights is inconsistent with both financial practice and with the economic and financial theory of corporate valuation. Financial practitioners use market value weights to measure the weighted average cost of capital because market values are the best measure of the amount of debt and equity capital invested in the company on a forward-looking basis. Economic and financial theory also incontrovertibly requires the sole use of market value capital structure weights to calculate a company's weighted average cost of capital. Indeed, Dr. Cornell recommends the use of market value weights to calculate the weighted average cost of capital in

² Since my previous affidavits discussed the need to include quarterly compounding and flotation costs and contained extensive discussion of the unique risks of providing interstate access services, I will not discuss these topics further in this affidavit.

his book, *Corporate Valuation*, cited in Paragraph 1 of his affidavit. Since book value equity weights are significantly lower than market value equity weights, the use of book value equity weights by itself causes Cornell/Hirshleifer to underestimate the ILECs' weighted average cost of capital by at least 52 basis points.

7. Proxy Companies. Cornell/Hirshleifer apply DCF and CAPM methodologies to the RHCs to estimate the ILECs' weighted average cost of capital. The RHCs are poor proxies for the purpose of estimating the ILECs' cost of capital because the traditional DCF and CAPM models produce results which understate the true cost of equity for companies such as the RHCs that are experiencing deregulation, competitive entry, dramatic industry restructuring, and profound technological change. Cornell/Hirshleifer could have avoided the difficulties of applying the DCF and CAPM Models to the RHCs by relying entirely on a broad group of competitive firms such as the S&P Industrials.

8. Three-Stage DCF Model. Cornell/Hirshleifer employ a three-stage DCF model in which their proxy companies' earnings are expected to grow in line with analysts' earnings growth expectations for only the next four years. After this initial period, Cornell/Hirshleifer arbitrarily assume that their proxy companies' earnings will decline over a 15-year period to their current expected growth in the GNP, 5.5 percent, and then grow at 5.5 percent forever. Cornell/Hirshleifer's basic growth assumptions are not only arbitrary, but also inconsistent with the evidence that a company's earnings can grow at the analyst's expected growth rate for many years. Cornell/Hirshleifer's incorrect and arbitrary assumptions regarding future growth cause them to significantly underestimate the ILECs' cost of equity.

9. Anomalies of the Cornell/Hirshleifer Three-Stage DCF Model. Cornell/Hirshleifer's three-stage DCF Model produces cost of capital estimates that fail the common sense standard that the cost of capital should increase with the risk of an investment.

Cornell/Hirshleifer's estimates fail to conform to this standard in several areas. First, among telecommunications companies, the companies with the highest betas have the lowest DCF results, while companies with low betas have high DCF results. Second, Cornell/Hirshleifer claim that local exchange service, including the provision of interstate access, is less risky than other telecommunications services such as interexchange service. Yet their three-stage DCF Model produces significantly lower DCF results for the interexchange carriers AT&T, MCI, and Sprint, than it does for their proxy group of RHCs. Indeed, using their methodology, the average DCF result for AT&T, MCI, and Sprint is only 7.75 percent, as compared to their result of 9.28 percent for the RHCs. Third, although Cornell/Hirshleifer claim that their telecommunications proxy group is significantly less risky than the S&P 500, their DCF result for the S&P 500 is only 8.6 percent, significantly less than their DCF result for their telecommunications proxy group. Fourth, although electric and natural gas utilities are generally considered to be less risky than the RHCs, Cornell/Hirshleifer's three-stage DCF Model produces approximately the same DCF result for electric utilities as for the RHCs, and significantly higher DCF results for natural gas companies than for the RHCs. These incongruous results provide convincing evidence that Cornell/Hirshleifer's three-stage DCF methodology simply does not provide reasonable cost of equity estimates.

10. Capital Asset Pricing Model. The CAPM approach requires estimates of the required rate of return on a risk-free security, estimates of a company-specific risk factor, or beta, and estimates of the required rate of return on the market portfolio. Cornell/Hirshleifer's CAPM analysis is compromised by their procedure for estimating their proxy companies' average beta and the expected rate of return on the market portfolio. To estimate their proxy companies' betas, for example, Cornell/Hirshleifer use five years of historical data on the market rates of return for their proxy companies and the market portfolio. These historical data surely do not reflect the

momentous changes in telecommunications industry risk caused by the passage of the Telecommunications Act of 1996. The momentous changes in telecommunications industry risk are also not included in the Barra betas Cornell/Hirshleifer use to corroborate their five-year historical betas. Since future betas for the RHCs are likely to exceed historical betas, Cornell/Hirshleifer's use of historical betas have caused them to further underestimate the ILECs' cost of equity. In addition, Cornell/Hirshleifer make no allowance for the tendency of the traditional CAPM to underestimate the cost of equity for companies whose estimated beta is less than 1.0.³

11. Risk Premium. Cornell/Hirshleifer estimate the expected return on the market portfolio from historical risk premium data on returns to stock and bond investors. Prior to Cornell/Hirshleifer's testimony for AT&T, Professor Cornell recommended in his published work the use of the commonly accepted arithmetic mean risk premium advocated by Ibbotson Associates, which was 7.8 percent at the time of the Cornell/Hirshleifer studies. In their testimony for AT&T, Cornell/Hirshleifer recommend a risk premium that is 230 basis points less than the Ibbotson risk premium Dr. Cornell previously recommended. Cornell/Hirshleifer's use of a significantly lower risk premium than Dr. Cornell has previously recommended, along with a historical beta that significantly underestimates the RHCs' future risk, causes them to underestimate the ILECs' CAPM cost of equity by approximately 380 basis points.

³ The original evidence that the unadjusted CAPM tends to underestimate the cost of equity for companies whose equity beta is less than 1.0 and to overestimate the cost of equity for companies whose equity beta is greater than 1.0 was presented in a paper by Black, Jensen, and Scholes, "The Capital Asset Pricing Model: Some Empirical Tests," *Journal of Business* 45 (1972), pp. 444-455. Numerous subsequent papers have validated the Black, Jensen, and Scholes findings, including those by Litzenberger and Ramaswamy, Banz, Fama and French, and Fama and MacBeth. See, for example, Fischer Black, Michael C. Jensen, and Myron Scholes, "The Capital Asset Pricing Model: Some Empirical Tests," in *Studies in the Theory of Capital Markets*, M. Jensen, ed. New York: Praeger, 1972; Eugene Fama and James MacBeth, "Risk, Return, and Equilibrium: Empirical Tests," *Journal of Political Economy* 81 (1973), pp. 607-36; Robert Litzenberger and Krishna Ramaswamy, "The Effect of Personal Taxes and Dividends on Capital Asset Prices: Theory and Empirical Evidence," *Journal of Financial Economics* 7 (1979), pp. 163-95.; Rolf Banz, "The Relationship between Return and Market Value of Common Stocks," *Journal of Financial Economics* (March 1981), pp. 3-18; and Eugene Fama and Kenneth French, "The Cross-Section of Expected Returns," *Journal of Finance* (June 1992), pp. 427-465.

12. Overall Tests of Reasonableness. Cornell/Hirshleifer provide a misleading and highly selective review of financial data in an attempt to support the reasonableness of their recommended weighted average cost of capital for the ILECs. The data presented are misleading because Cornell/Hirshleifer fail to acknowledge that: (1) the cited data are calculated on an after-tax basis, and hence are not directly comparable to their before-tax estimate of the ILECs' weighted average cost of capital; (2) the cited data from Merrill Lynch and Salomon Smith Barney are not estimates of the ILECs' weighted average cost of capital; and (3) Merrill Lynch and Salomon Smith Barney have specifically warned against the use of their data outside of the context for which it was intended. Cornell/Hirshleifer also fail to refer to sources such as the well-known Ibbotson Associates' cost of capital estimates for telecommunications firms, which, not surprisingly, are significantly higher than the Cornell/Hirshleifer estimate of the ILECs' weighted average cost of capital. The Ibbotson estimates, on a before-tax basis, are some 200 to more than 500 basis points higher than the Cornell/Hirshleifer estimate.

III. Capital Structure

13. Cornell/Hirshleifer attempt to calculate the ILECs' forward-looking economic cost of capital by computing a weighted average of the RHCs' cost of debt and cost of equity. To estimate the ILECs' weighted average cost of capital, Cornell/Hirshleifer use both book and market value capital structure weights. Using book value capital structure weights containing 53 percent debt and 47 percent equity, Cornell/Hirshleifer estimate the ILECs' weighted average cost of capital to be 8.12 percent. Using market value capital structure weights containing 18 percent debt and 82 percent equity, Cornell/Hirshleifer estimate the ILECs' weighted average cost of capital to be 9.15 percent. Their final recommended weighted average cost of capital of 8.63 percent is the midpoint of the range of estimates they found using book and market value capital structure weights.

14. As I explained in my previous affidavits, financial and economic theory require the use of market value weights to calculate the weighted average cost of capital because market values are the best measures of the amounts of debt and equity investors have invested in the company on a going-forward basis. Furthermore, investors measure the risk and return on their investment portfolios using market value weights because they purchase a company's stocks and bonds at market price, not at book value. Thus, the return, and the risk or uncertainty of the return, can only be measured in terms of market values.

15. As I also explained in my previous affidavits, economists unanimously reject the use of book value capital structures to estimate the weighted average cost of capital because book values depend on arbitrary accounting conventions, are based on historical costs, and are inherently backward looking. I have taught corporate finance for more than 25 years, and I have never encountered a financial or economic text that recommended anything other than the use of market value weights to calculate a company's weighted average cost of capital. For example, the following well-known texts recommend the use of market value weights to estimate the weighted average cost of capital: Copeland/Weston, *Financial Theory and Corporate Policy*, Chapter 13, Third Edition, 1988, Addison-Wesley, Reading, MA.; Brealey/Myers, *Principles of Corporate Finance*, Chapter 9, page 214, Fifth Edition, 1996, McGraw-Hill; Robert C. Higgins, *Analysis for Financial Management*, Chapter 8, Fourth Edition, 1995, Irwin.

16. In contrast to the testimony he provides in this proceeding, Dr. Cornell clearly recommends the use of a firm's target market value capital structure, not its book value capital structure, in his book, *Corporate Valuation*. On page 224 of his book he states, "The appropriate weights to use are the firm's *long-run target weights stated in terms of market value* [original emphasis]." On page 225, Professor Cornell writes,

"It is also possible to avoid the circularity by estimating the long-run target weights directly. For example, the appraiser may assume that all the comparable

firms have the same target capital structures. Given this assumption, the best estimate of the target capital structure is the average capital structure across the comparable firms. If the comparable firms are publicly traded, *their market value weights can be calculated directly and averaged* [emphasis added].”

Finally, on pages 228-229 of his book, he provides an example of the correct way to calculate the weighted average cost of capital:

Table 7-8 puts all the pieces together and calculates FERC’s weighted average cost of capital using the target financing weights chosen by management. *Notice that the target weight of equity is significantly greater than the book value weight. This reflects management’s realization that the market value of equity is much greater than the book value.* [emphasis added]

17. Cornell/Hirshleifer also approvingly quote from a book by Copeland, Koller, and Murrin, entitled, *Valuation: Measuring And Managing The Value Of Companies*, and by Damodaran, entitled, *Damodaran On Valuation: Security Analysis For Investment And Corporate Finance*. Cornell/Hirshleifer fail to note that both Copeland, Koller, and Murrin and Damodaran clearly recommend the use of market value capital structure weights to calculate the weighted average cost of capital. Specifically, Copeland, Koller, and Murrin state at page 240 that one must “employ market value weights for each financing element, because market values reflect the true economic claim of each type of financing outstanding, whereas book values usually do not.” Damodaran, at page 41 in the section titled, “Calculating the Weights of Debt and Equity Components, Market-Value versus Book-Value Weights,” states:

The weights assigned to equity and debt in calculating the weighted average cost of capital have to be based upon market value, not book value. The rationale rests on the fact that the cost of capital measures the cost of issuing securities, stocks as well as bonds, to finance projects and that these securities are issued at market value, not at book value.

18. In defense of their use of a book value capital structure to measure the ILECs’ weighted average cost of capital, AT&T and Cornell/Hirshleifer argue that: (1) the network access business is a low risk “quasi-monopoly;” (2) low risk businesses can support a higher level of debt in the capital structure; [Cornell/Hirshleifer at page 25]; (3) the holding company

book value capital structure is reasonable because the RHCs were “traditional monopolistic local exchange” companies at the time equity was “recorded on their books at what was then market value” [Cornell/Hirshleifer at page 25]; and (4) “LEC affiant” Dr. Vander Weide has recommended that state utility commissions adopt book value capital structures in his previous testimonies [AT&T at pages 19—20].

19. AT&T’s first argument, that the network access business is a “quasi-monopoly,” is extensively refuted in both my initial and reply affidavits. I specifically demonstrate in my prior affidavits that the interstate access market, the subject of this proceeding, has been opened to full competition since the mid-1980’s, and competitors have specifically targeted this market because of the strong economic incentive competitors have to avoid paying the 25 percent of the cost of the local loop that is allocated to interstate access services. Indeed, I provided evidence that competitors are attracting more than 50 percent of net new business adds; and that investors are expecting competitors’ market share to dramatically increase in the near future. AT&T’s testimony does not address any of these factors or data.

20. AT&T’s second argument, that a low risk firm can support a higher level of debt in its capital structure, is theoretically correct. In practice, however, I have presented evidence in my prior affidavits that firms which AT&T claims are less risky *do not* have a higher level of debt in their capital structures. AT&T’s testimony claims, for example, that the RHCs are less risky than the S&P Industrials. Yet the evidence I have presented shows that the RHCs and the S&P Industrials have approximately the same market value capital structures. Given this evidence, either AT&T must accept that less risky firms do not have more debt in their capital structures, or they must accept that the S&P Industrials are a good risk proxy for the RHCs.

21. AT&T’s third argument, that the holding company book value capital structure is reasonable because the RHCs were “traditional monopolistic local exchange companies” at the

time equity was recorded on their books at market value, is incredibly naive at best, and downright misleading at worst. AT&T and their witnesses Cornell/Hirshleifer certainly should understand that most of the equity on the RHCs books is associated with retained earnings, not original issues of equity. Retained earnings are never recorded on a company's books at market value; they are always recorded at book, or historical cost. Furthermore, as I demonstrated in my reply affidavit, the book value of the ILECs' equity has been reduced by at least \$28 billion as a result of accounting write-offs for the discontinuance of FAS 71 and the adoption of the new accounting standard for Other Post Employment Benefits. These huge write-offs, which represented more than 52 percent of the total equity in the ILECs' capital structures, had no effect whatsoever on their cash flows or market values. In addition, that small part of the book value of equity associated with original issuances of stock was recorded at prices that are significantly less than current market values. For these reasons, AT&T's argument that the RHCs' book value capital structure represents the historical financing of the local exchange network is incorrect.

22. AT&T's fourth argument, that I have urged state utility commissions to adopt book value capital structures rather market value capital structures, is outrageous. I have never urged a state utility commission to adopt a book value capital structure rather than a market value capital structure in either traditional rate of return proceedings or forward-looking economic cost proceedings. I have been well aware since I began working in finance that financial theory requires the use of market value capital structures to estimate the cost of capital, not book value capital structures. In the 1993 testimony cited by AT&T, I do not address the issue of the use of market value versus book value capital structures. I merely recognized at that time that the Virginia Corporation Commission had announced it would only accept book value capital structures to estimate the cost of capital in traditional rate proceedings. My testimony

recommended that the Commission adopt the subsidiary's book value capital structure rather than the parent's book value capital structure because that value best represented the book value capital structure of the subsidiary. Clearly, a market value capital structure would have better represented the actual amount of debt and equity invested in the subsidiary's assets, but the Virginia Commission was unwilling to consider market value capital structures in traditional rate of return proceedings. If AT&T had read my testimony carefully, it could not have made such an egregious misrepresentation of my actual testimony.

23. Cornell/Hirshleifer speculate on page 25 of their affidavit that the use of book value weights is an attempt to "approximate the cost of capital for the network access business as if it were a stand-alone business." Given Dr. Cornell's prior recognition that the cost of capital must be estimated in terms of market values, it is surprising that Cornell/Hirshleifer made no attempt to approximate the market value capital structure "for the network access business as if it were a stand-alone business." As described in paragraph 27 of my Reply Affidavit, the market value capital structure of the local exchange companies can be easily approximated from standard valuation formulas. Morgan Stanley, for example, values local exchange company assets by calculating the local exchange companies' most recent EBITDA⁴ and multiplying this value by a factor of 7 or 8. This value represents the market value of the enterprise, and the percent debt in the market value capital structure can be obtained by dividing total debt by the value of the enterprise.⁵ I have performed this calculation for three groups of local exchange companies. To be conservative, I have reduced the EBITDA multiple in the calculation by 15 percent. This calculation results in a range of implied market value capital structures for the local

⁴ EBITDA is defined as earnings before interest, taxes, depreciation, and amortization. It is frequently used as a measure of a company's ability to generate cash from its operations.

⁵ Morgan Stanley Dean Witter, "Telecommunications Services—Sprint," December 3, 1998, page 3.